

SUBSTITUTE SPECIFICATION  
AND ABSTRACT

**DESCRIPTION**

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ALLOY COATING FOR DIFFUSION BARRIER, METHOD FOR FORMING  
SAME, AND HIGH TEMPERATURE DEVICE MEMBER

**Technical field**

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The present invention relates to a diffusion barrier alloy film for use as a surface film (coating film) for extending the service life of a high-temperature apparatus member, which is used at a high temperature, such as a gas turbine blade, a jet engine turbine blade, a combustor, a nozzle, a boiler heat transfer pipe, a waste disposal apparatus, a semiconductor fabrication discharge gas treating apparatus, or the like, a method of manufacturing such an alloy film, and a high-temperature apparatus member incorporating such an alloy film.

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**Background Art**

High-temperature apparatus members, such as industrial gas turbine blades, jet engines, or the like, for example, are subject to a fluid temperature in excess of 1300°C. Those members, which are made of a metal material, are susceptible to damage due primarily to high-temperature oxidation. For the purpose of making the members resistant to heat, it has heretofore been the general practice to